General

Guideline Title

ACR Appropriateness Criteria® staging of testicular malignancy.

Bibliographic Source(s)

Oto A, Yacoub JH, Casalino DD, Remer EM, Blaufox MD, Bishoff JT, Coursey CA, Dighe M, Eberhardt SC, Harvin HJ, Lazarus E, Leyendecker JR, Lockhart ME, Nikolaidis P, Porter C, Ramchandani P, Sheth S, Vikram R, Expert Panel on Urologic Imaging. ACR Appropriateness CriteriaÂ® staging of testicular malignancy. [online publication]. Reston (VA): American College of Radiology (ACR); 2012. 7 p. [69 references]

Guideline Status

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary.

Recommendations

Major Recommendations

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary. The recommendations that follow are based on the previous version of the guideline.

ACR Appropriateness Criteria®

Clinical Condition: Staging of Testicular Malignancy

Variant: Testis tumor (diagnosed by orchiectomy).

Radiologic Procedure	Rating	Comments	RRL*
CT abdomen and pelvis with contrast	9		
X-ray chest	8		
CT chest with contrast	7	Can be used when combined with staging abdomen and pelvis CT with IV contrast. If ordered alone (i.e.,	*Relative Radiation

Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate

Radiologic Procedure	Rating	Comments	RRL*
		not with the CT abdomen and pelvis examination), without contrast preferred.	
CT chest without contrast	7		
MRI abdomen and pelvis without and with contrast	7	See statement regarding contrast in text under "Anticipated Exceptions."	O
CT abdomen and pelvis without contrast	6		
MRI abdomen and pelvis without contrast	6		O
FDG-PET/CT whole body	4	Possibly indicated for follow-up of residual or recurrent seminoma. No clear benefit in initial staging over CT.	
Tc-99m bone scan whole body	3		
US abdomen and retroperitoneum	3	Variable and usually limited visualization of the retroperitoneum.	O
Lymphangiography abdomen and pelvis bipedal	2		Varies
US scrotum	2	Essential for initial diagnosis, usually not useful for staging.	O
CT abdomen and pelvis without and with contrast	2		
CT chest without and with contrast	2		
X-ray abdomen	1		
X-ray intravenous urography	1		
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level

Note: Abbreviations used in the table are listed at the end of the "Major Recommendations" field.

Summary of Literature Review

Introduction/Background

Although carcinoma of the testicle is relatively uncommon, representing only 1% of all malignancies occurring in men, it is the most frequent malignancy in men between the ages of 20 and 34, accounting for 10% to 14% of cancer incidence in that age group. The National Cancer Institute estimates that there will be about 8,590 new cases of testicular cancer in the U.S. and about 360 deaths from the disease in 2012.

Over 90% of testicular tumors are of germ cell origin and are malignant. Of these, 40% are seminomas. The nonseminomatous tumors are clinically more aggressive and include embryonal cell carcinoma (15% to 20%), teratoma (5% to 10%), and choriocarcinoma (less than 1%). Testicular cancer has an excellent prognosis, with 10-year survival rates exceeding 96%. Non–germ-cell tumors are typically benign and have their origin from the Leydig and Sertoli cells or from connective tissue stroma.

Various systems have been used for staging patients with testicular cancer, but most commonly the American Joint Commission on Cancer's system for staging and end-results reporting is used (see Appendix 1 in the original guideline document).

Testicular tumors metastasize by either the hematogenous or lymphatic route. Most follow the testicular lymphatic drainage alongside the testicular veins to regional lymph node groups. Tumors from the left testes will typically metastasize to the left para-aortic nodal group just below the left renal vein, and right testicular tumors will typically metastasize to the paracaval, precaval, and aortocaval nodes. Crossover of lymphatic involvement may occur in either right-sided or left-sided tumors; however, it is unusual to have contralateral metastasis without involvement of the ipsilateral nodes. Regional lymph node disease can further spread to nonregional lymph node groups, including common iliac, internal iliac, and external iliac nodes, or via the thoracic duct to the left supraclavicular nodes and subsequently to the lungs, constituting distant metastasis (see Appendix 1 in the original guideline document).

Tumor Markers

Tumor markers such as lactate dehydrogenase, alpha-fetoprotein (AFP), and beta-human chorionic gonadotropin (β-hCG) are helpful not only in diagnosing patients with testicular tumors but in staging them as well. Approximately 90% of patients with advanced nonseminomatous tumors will have elevated levels of one or more of these markers (see Appendix 1 in the original guideline document).

AFP is elevated in approximately 50% to 70% of those with embryonal cell carcinoma, yolk sac carcinoma, or tumors of mixed composition. β-hCG is elevated in 40% to 60% of patients with testicular cancer, including all those with choriocarcinoma, 80% of those with embryonal cell carcinoma, and 10% to 25% of those with histologically pure seminoma. An elevated AFP is never found in pure seminomas or choriocarcinomas.

Obtaining of tumor markers before and after orchiectomy is also very helpful in determining whether any residual disease is present and in planning further therapy. Additionally, tumor markers are essential in the follow-up evaluation to assess both the need for and response to therapy (e.g., chemotherapy). Some patients may exhibit an elevation in serum markers at any time despite normal clinical findings and imaging studies. If causes for false-positive marker elevation are ruled out, these patients need to be treated for active disease. Significant marker elevation at presentation often portends to a worse prognosis for the patient.

A minority of patients with nonseminomatous tumors post-treatment may develop retroperitoneal masses of relatively low attenuation, which represent mature teratoma (differentiated teratoma in the British literature) rather than new or residual lymphadenopathy. This process is referred to as growing teratoma syndrome. It is a benign process; however, the tumors continue to grow over time and may result in significant morbidity due to their bulk. Mature teratoma is treated by surgical resection. Differentiation between mature teratoma and residual or recurrent lymphadenopathy may be possible by measuring serum marker levels. Treatment options may differ depending on the histology of the mass(es). Neither computed tomography (CT) nor magnetic resonance imaging (MRI) can reliably separate the two entities, which may sometimes coexist.

Imaging Studies

Many imaging studies have been used in assessing patients with testicular tumors. In years past, intravenous urography was commonly used for staging purposes; however, with the development of newer techniques the use of this imaging study is of historical interest for this purpose. Studies used today to assess the retroperitoneum include abdominal ultrasonography (US), CT, MRI, and positron emission tomography imaging with fluorine-18-2-fluoro-2-deoxy-D-glucose (FDG-PET). Studies used to assess pulmonary disease include chest radiograph and chest CT. US continues to be used preferentially for assessing the primary tumors.

Ultrasonography

Scrotal US is frequently used, and should always be the initial imaging modality in assessing patients with scrotal masses. This study can often differentiate fluid-filled spermatoceles and hydroceles from solid intratesticular tumors. Oftentimes, the diagnosis of a testicular mass is apparent by clinical evaluation, and US can be used for confirmation. According to the recent literature, it is suggested that both testicular microlithiasis and testicular germ cell tumors may be caused by a common defect, such as tubular degeneration, and testicular microlithiasis may present as a marker

for such abnormalities. However, there remains significant controversy as to whether testicular microlithiasis represents an independent risk factor for developing testicular malignancy. Because of its high incidence of association with germ cell tumors, it is prudent to follow up patients with testicular microlithiasis with physical examination and US and to encourage self-examination, though there is no consensus regarding the necessity, interval, duration, or diagnostic modality that should be used for follow-up.

CT, MRI, and sometimes PET/CT are used for staging testicular cancer instead of US. Relative to those modalities, US is less reproducible due to operator dependence and frequently is nondiagnostic due to bowel gas interfering with retroperitoneal node evaluation.

Computed Tomography

CT is the most common study used for assessing the retroperitoneum for the presence of metastatic testicular malignancy. It is reproducible and provides excellent imaging of the periaortic and pericaval regions. Difficulties with CT are that many young men have little retroperitoneal fat, which tends to be an impediment to the study, and that CT cannot detect metastatic disease in lymph nodes of normal size. Additionally, inflammatory lymph nodes cannot be differentiated from those that are enlarged secondary to malignant disease.

CT interpretation is aided by understanding the lymphatic drainage of the testicles. Node involvement is usually limited to the side of the primary tumor, and crossover is usually present only in the presence of advanced disease. Various benign conditions have also been found to mimic metastases from testicular tumors. Lymph nodes >1 cm are suspicious for metastatic disease, particularly if they are located in the hilar regions of the kidney or in the periaortic or caval areas. Various studies have established the accuracy of CT in detecting metastatic retroperitoneal lymph nodes, which ranges from 73% to 97%. Sensitivity ranges from 65% to 96% and specificity from 81% to 100%. Experience also indicates that accuracy declines in patients with limited disease (stage N1 and stage N2) and also if the upper limit of normal lymph node size is lowered to 4 mm. Of note, most of these studies are relatively old and were done with single-slice CT. Limited new data suggest similar accuracy with multislice CT compared to single-slice CT.

Surveillance is becoming the strategy of choice for an increasing number of patients with stage I germ cell tumor, with repeated CT imaging playing a critical role in this strategy. Due to the young age of this patient population, increasing use of CT has led to concerns regarding the increasing risk of radiation exposure. However, available data are still controversial. One study has estimated the relative risk of a secondary malignancy associated with surveillance strategy to be 15.2 compared to a single scan after retroperitoneal lymph node dissection. On the other hand, in a recent population-based study of patients with stage I testicular cancer secondary malignancies of the abdomen-pelvis were found to be uncommon, and the risk of secondary cancer did not vary with the amount of diagnostic radiation exposure. The concern about radiation exposure has led to radiation reduction strategies in surveillance protocols, which no longer include chest CT, elimination of pelvic CT except in cases where the pelvis is deemed high risk, and the use of a low-dose multidetector CT (MDCT) protocol.

Lymphangiography

Lymphangiography has become a method of only historical significance since its accuracy has been shown to be no better than that of CT since the early 1980s, while being more invasive, technically challenging, and costly. Magnetic resonance lymphangiography appears to have potential, but few studies have demonstrated its safety and accuracy for detecting nodal metastases in patients with testicular cancer. The contrast agent, ferumoxytran, has not yet been approved by the U.S. Food and Drug Administration (FDA) for clinical use.

Magnetic Resonance Imaging

MRI has also been used in the staging of testicular tumors; evidence indicates that it is comparable to CT. It can be useful in patients in whom iodinated contrast cannot be given. As more attention is turned to radiation exposure in testicular cancer patients undergoing repeated cross-sectional imaging at a young age, MRI may represent an advantageous alternative to CT. The disadvantages of MRI are longer examination times, high cost, and low availability.

MRI could also be useful as a second line investigation for preoperative evaluation of the testes when US is inconclusive, with some evidence that it can distinguish germ cell tumors from benign mimics and lymphoma and therefore may have the potential to spare a small subset of patients from getting unnecessary orchiectomies. MRI of the brain is indicated in few cases where there is clinical suspicion of brain metastases.

Chest Radiography

Many studies have addressed the value of chest radiography in assessing pulmonary metastases. These studies indicate that chest radiograph alone is satisfactory in the initial staging in patients with testicular malignancies. Chest CT offers little in these patients; however, it is indicated in cases with positive abdominal CT or abnormal chest radiography. While CT is more sensitive for detecting recurrent disease in the chest, recent studies indicate that chest radiograph is sufficient for follow-up for stage I seminomas and stage I nonseminoma. In stage II and higher nonseminomas, chest CT is the study of choice, with no additional value for routine chest radiographs. There were no studies specifically addressing seminomas with retroperitoneal lymphadenopathy. Therefore chest CT remains the study of choice for follow-up in those patients.

Radionuclide Imaging

FDG-PET has been used in assessing patients with testicular cancers, but its true value in staging patients has yet to be defined. In initial staging, PET may be only slightly more sensitive than CT. FDG-PET is superior to CT in the prediction of viable tumor in postchemotherapy seminoma residuals, and therefore it can be helpful for follow-up of patients with stage IIB, IIC, and III seminoma who have a residual mass >3 cm and normal markers. In nonseminoma, on the other hand, the value of FDG-PET is limited. It has limited predictive value for evaluation of tumor viability in the residual masses and cannot differentiate mature teratoma from necrosis or fibrosis.

Furthermore, a recent trial by the National Cancer Research Institute's Testis Cancer Clinical Studies Group using FDG-PET in an effort to predict relapse in patients with high-risk stage I nonseminomatous germ cell tumors was terminated early due to unacceptable relapse rates among PET-negative patients.

Bone scans can be useful in assessing early bone lesions before they are detectable by CT, although one study suggests that FDG-PET scans are more sensitive and can substitute for conventional bone scans.

Summary

- In most instances, the diagnosis of testicular tumors is established with a carefully performed physical examination and scrotal US.
- Tumor markers are useful for determining the presence of residual disease.
- Cross-sectional imaging studies (CT, MRI) are useful in determining the location of metastases.
- FDG-PET scans have a slightly higher sensitivity than CT, but their role in staging testicular cancer has not been determined in a large study. FDG-PET may play a role in follow-up of higher-stage seminoma after chemotherapy.
- Bone scans are useful in the absence of FDG-PET scans and should be used when bone metastases are suspected.

Anticipated Exceptions

Nephrogenic systemic fibrosis (NSF) is a disorder with a scleroderma-like presentation and a spectrum of manifestations that can range from limited clinical sequelae to fatality. It appears to be related to both underlying severe renal dysfunction and the administration of gadolinium-based contrast agents. It has occurred primarily in patients on dialysis, rarely in patients with very limited glomerular filtration rate (GFR) (i.e., <30 mL/min/1.73 m^2), and almost never in other patients. There is growing literature regarding NSF. Although some controversy and lack of clarity remain, there is a consensus that it is advisable to avoid all gadolinium-based contrast agents in dialysis-dependent patients unless the possible benefits clearly outweigh the risk, and to limit the type and amount in patients with estimated GFR rates <30 mL/min/1.73 m^2. For more information, please see the American College of Radiology (ACR) Manual on Contrast Media (see the "Availability of Companion Documents" field).

Abbreviations

- CT, computed tomography
- FDG-PET, fluorine-18-2-fluoro-2-deoxy-D-glucose positron emission tomography
- IV, intravenous
- MRI, magnetic resonance imaging
- Tc, technetium
- US, ultrasound

Relative Radiation Level Designations

Relative Radiation Level*	Adult Effective Dose Estimate Range	Pediatric Effective Dose Estimate Range
O	0 mSv	0 mSv
	<0.1 mSv	<0.03 mSv
	0.1-1 mSv	0.03-0.3 mSv
	1-10 mSv	0.3-3 mSv
	10-30 mSv	3-10 mSv
	30-100 mSv	10-30 mSv

Relative Radiation Level*	Adult Effective Dose Estimate Range	Pediatric Effective Dose Estimate Range
*RRL assignments for some of the examinations cannot be made, because the actual patient doses in these procedures vary as a function of a number of factors (e.g., region of the body exposed to ionizing radiation, the imaging guidance that is used). The RRLs for these examinations are designated as "Varies."		

Clinical Algorithm(s)

Algorithms were not developed from criteria guidelines.

Scope

Disease/Condition(s)

Testicular cancer

Guideline Category

Evaluation

Clinical Specialty

Nuclear Medicine

Oncology

Radiology

Urology

Intended Users

Health Plans

Hospitals

Managed Care Organizations

Physicians

Utilization Management

Guideline Objective(s)

To evaluate the appropriateness of radiologic procedures for staging patients with testicular cancer

Target Population

Patients with testicular cancer

Interventions and Practices Considered

1. Computed tomography (CT)

    - Abdomen and pelvis with contrast
    - Abdomen and pelvis without contrast
    - Abdomen and pelvis without and with contrast
    - Chest with contrast
    - Chest without contrast
    - Chest without and with contrast
2. X-ray
    - Chest
    - Abdomen
    - Intravenous urography
3. Magnetic resonance imaging (MRI)
    - Abdomen and pelvis without and with contrast
    - Abdomen and pelvis without contrast
4. Fluorine-18-2-fluoro-2-deoxy-D-glucose positron emission tomography (FDG-PET) whole body
5. Technetium (Tc)-99m bone scan whole body
6. Ultrasound (US)
    - Abdomen and retroperitoneum
    - Scrotum
7. Lymphangiography abdomen and pelvis bipedal

Major Outcomes Considered

Utility of radiologic procedures in staging of testicular malignancy

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Literature Search Procedure

The Medline literature search is based on keywords provided by the topic author. The two general classes of keywords are those related to the condition (e.g., ankle pain, fever) and those that describe the diagnostic or therapeutic intervention of interest (e.g., mammography, MRI).

The search terms and parameters are manipulated to produce the most relevant, current evidence to address the American College of Radiology Appropriateness Criteria (ACR AC) topic being reviewed or developed. Combining the clinical conditions and diagnostic modalities or therapeutic procedures narrows the search to be relevant to the topic. Exploding the term "diagnostic imaging" captures relevant results for diagnostic topics.

The following criteria/limits are used in the searches.

1. Articles that have abstracts available and are concerned with humans.
2. Restrict the search to the year prior to the last topic update or in some cases the author of the topic may specify which year range to use in the search. For new topics, the year range is restricted to the last 5 years unless the topic author provides other instructions.
3. May restrict the search to Adults only or Pediatrics only.
4. Articles consisting of only summaries or case reports are often excluded from final results.

The search strategy may be revised to improve the output as needed.

Number of Source Documents

The total number of source documents identified as the result of the literature search is not known.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Strength of Evidence Key

Category 1 - The conclusions of the study are valid and strongly supported by study design, analysis, and results.

Category 2 - The conclusions of the study are likely valid, but study design does not permit certainty.

Category 3 - The conclusions of the study may be valid, but the evidence supporting the conclusions is inconclusive or equivocal.

Category 4 - The conclusions of the study may not be valid because the evidence may not be reliable given the study design or analysis.

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

The topic author drafts or revises the narrative text summarizing the evidence found in the literature. American College of Radiology (ACR) staff draft an evidence table based on the analysis of the selected literature. These tables rate the strength of the evidence for all articles included in the narrative text.

The expert panel reviews the narrative text, evidence table, and the supporting literature for each of the topic-variant combinations and assigns an appropriateness rating for each procedure listed in the table. Each individual panel member forms his/her own opinion based on his/her interpretation of the available evidence.

More information about the evidence table development process can be found in the ACR Appropriateness Criteria® Evidence Table Development document (see the "Availability of Companion Documents" field).

Methods Used to Formulate the Recommendations

Expert Consensus (Delphi)

Description of Methods Used to Formulate the Recommendations

Modified Delphi Technique

The appropriateness ratings for each of the procedures included in the Appropriateness Criteria topics are determined using a modified Delphi methodology. A series of surveys are conducted to elicit each panelist's expert interpretation of the evidence, based on the available data, regarding the appropriateness of an imaging or therapeutic procedure for a specific clinical scenario. American College of Radiology (ACR) staff distributes surveys to the panelists along with the evidence table and narrative. Each panelist interprets the available evidence and rates each procedure. The surveys are completed by panelists without consulting other panelists. The ratings are a scale between 1 and 9, which is further divided into three categories: 1, 2, or 3 is defined as "usually not appropriate"; 4, 5, or 6 is defined as "may be appropriate"; and 7, 8, or 9 is defined as "usually appropriate." Each panel member assigns one rating for each procedure per survey round. The surveys are collected and the results are tabulated, de-identified and redistributed after each round. A maximum of three rounds are conducted. The modified Delphi technique enables each panelist to express individual interpretations of the evidence and his or her expert opinion without excessive bias from fellow panelists in a simple, standardized and economical process.

Consensus among the panel members must be achieved to determine the final rating for each procedure. Consensus is defined as eighty percent (80%) agreement within a rating category. The final rating is determined by the median of all the ratings once consensus has been reached. Up to three rating rounds are conducted to achieve consensus.

If consensus is not reached, the panel is convened by conference call. The strengths and weaknesses of each imaging procedure that has not reached consensus are discussed and a final rating is proposed. If the panelists on the call agree, the rating is accepted as the panel's consensus. The document is circulated to all the panelists to make the final determination. If consensus cannot be reached on the call or when the document is circulated, "No consensus" appears in the rating column and the reasons for this decision are added to the comment sections.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The recommendations are based on analysis of the current literature and expert panel consensus.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Selection of appropriate radiologic imaging procedures for evaluation of patients with testicular malignancy

Potential Harms

- Computed tomography (CT) accuracy declines in patients with limited disease (stage N1 and stage N2) and also if the upper limit of normal lymph node size is lowered to 4 mm.
- Due to the young age of patients with testicular malignancy, increasing use of CT for surveillance strategy has led to concerns regarding the increasing risk of radiation exposure. One study has estimated the relative risk of a secondary malignancy associated with surveillance strategy to be 15.2 compared to a single scan after retroperitoneal lymph node dissection.
- Lymphangiography has become a method of only historical significance since its accuracy has been shown to be no better than that of CT since the early 1980s, while being more invasive, technically challenging, and costly.

Gadolinium-based Contrast Agents

Nephrogenic systemic fibrosis (NSF) is a disorder with a scleroderma-like presentation and a spectrum of manifestations that can range from limited clinical sequelae to fatality. It appears to be related to both underlying severe renal dysfunction and the administration of gadolinium-based contrast agents. It has occurred primarily in patients on dialysis, rarely in patients with very limited glomerular filtration rate (GFR) (i.e., <30 mL/min/1.73 m^2), and almost never in other patients. Although some controversy and lack of clarity remain, there is a consensus that it is advisable to avoid all gadolinium-based contrast agents in dialysis-dependent patients unless the possible benefits clearly outweigh the risk, and to limit the type and amount in patients with estimated GFR rates <30 mL/min/1.73 m^2. For more information, please see the American College of Radiology (ACR) Manual on Contrast Media (see the "Availability of Companion Documents" field).

Relative Radiation Level (RRL)

Potential adverse health effects associated with radiation exposure are an important factor to consider when selecting the appropriate imaging procedure. Because there is a wide range of radiation exposures associated with different diagnostic procedures, an RRL indication has been included for each imaging examination. The RRLs are based on effective dose, which is a radiation dose quantity that is used to estimate population total radiation risk associated with an imaging procedure. Patients in the pediatric age group are at inherently higher risk from exposure, both because of organ sensitivity and longer life expectancy (relevant to the long latency that appears to accompany radiation exposure). For these reasons, the RRL dose estimate ranges for pediatric examinations are lower as compared to those specified for adults. Additional information regarding radiation dose assessment for imaging examinations can be found in the ACR Appropriateness Criteria® Radiation Dose Assessment Introduction document (see the "Availability of Companion Documents" field).

Qualifying Statements

Qualifying Statements

The American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists, and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those examinations generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the U.S. Food and Drug Administration (FDA) have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

Oto A, Yacoub JH, Casalino DD, Remer EM, Blaufox MD, Bishoff JT, Coursey CA, Dighe M, Eberhardt SC, Harvin HJ, Lazarus E, Leyendecker JR, Lockhart ME, Nikolaidis P, Porter C, Ramchandani P, Sheth S, Vikram R, Expert Panel on Urologic Imaging. ACR Appropriateness CriteriaÂ® staging of testicular malignancy. [online publication]. Reston (VA): American College of Radiology (ACR); 2012. 7 p. [69 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

1996 (revised 2012)

Guideline Developer(s)

American College of Radiology - Medical Specialty Society

Source(s) of Funding

American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria®.

Guideline Committee

Committee on Appropriateness Criteria, Expert Panel on Urologic Imaging

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary.

Guideline Availability

Electronic copies of the updated guideline: Available from the American College of Radiology (ACR) Web site .

Print copies: Available from the American College of Radiology, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

Availability of Companion Documents

The following are available:

- ACR Appropriateness Criteria®. Overview. Reston (VA): American College of Radiology; 2 p. Electronic copies: Available in Portable Document Format (PDF) from the American College of Radiology (ACR) Web site .
- ACR Appropriateness Criteria®. Literature search process. Reston (VA): American College of Radiology; 1 p. Electronic copies: Available in Portable Document Format (PDF) from the ACR Web site .
- ACR Appropriateness Criteria®. Evidence table development – diagnostic studies. Reston (VA): American College of Radiology; 2013 Nov. 3 p. Electronic copies: Available in PDF from the ACR Web site .
- ACR Appropriateness Criteria®. Radiation dose assessment introduction. Reston (VA): American College of Radiology; 2 p. Electronic copies: Available in Portable Document Format (PDF) from the ACR Web site .
- ACR Appropriateness Criteria® Manual on contrast media. Reston (VA): American College of Radiology; 90 p. Electronic copies: Available in PDF from the ACR Web site .
- ACR Appropriateness Criteria®. Procedure information. Reston (VA): American College of Radiology; 1 p. Electronic copies: Available in PDF from the ACR Web site .
- ACR Appropriateness Criteria® staging of testicular malignancy. Evidence table. Reston (VA): American College of Radiology; 23 p. Electronic copies: Available from the ACR Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI on March 7, 2006. This NGC summary was updated by ECRI Institute on December 5, 2007. This NGC summary was updated by ECRI Institute on June 18, 2010. This summary was updated by ECRI Institute on January 13, 2011 following the U.S. Food and Drug Administration (FDA) advisory on gadolinium-based contrast agents. This NGC summary was updated by ECRI Institute on November 6, 2012.

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